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ABSTRACT

According to this publication, a school's most effective tool in encouraging student success may be its control over the time the student spends working on goal-oriented learning activities--that is, time on task. This document is intended to help school administrators understand the effects of their decisions on students' learning time and improve those decisions. Research on learning time, reviewed in chapter 1, links the amount of learning time with the learning achieved. Chapter 2 discusses disruptions that arise outside the classroom and their effects on learning time; decisions made at the building, district, state, or federal levels may result in unexpected limits on the amount of time allocated for instruction. Chapters 3, 4, and 5 examine forces inside the classroom that can affect time on task: student behavior, teacher behavior, and instructional methods. The final chapter looks more deeply into the implications of the concept of time on task and at the roles of teachers, principals, superintendents, staff development personnel, and communicators in increasing time on task in schools. An appendix provides suggestions on how to develop a program to increase time on task within a school district and includes a step-by-step checklist and observation forms. (Author/PGD)

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FOREWORD

Time on task. As educators, wherever we go today, we are confronted by the term. Some tell us that students spend too little time actually engaged in learning. Others counter that the amount of time makes little difference if it is spent on the wrong tasks.

Researchers sometimes disagree on the best way to evaluate or increase time on task. But most agree that time is one of the most crucial variables in education. How we allocate and how effectively we actually use the time available for learning can make a big difference in the quality of education our students receive.

While the number of voices talking about time on task has risen to a chorus, not much has been written. That is why the American Association of School Administrators decided to prepare this publication. This book will not answer all of your questions on this vital topic. However, if shared with administrators and teachers, it can help to heighten the awareness of time as an important variable in learning. The techniques suggested, if put to use, could make an immediate impact on learning.

Time on Task is one more step in AASA's continuing quest to assure the highest quality education for students. And high quality education is basic to the future of our democracy.

Paul B. Salmon, Ed.D.
Executive Director

INTRODUCTION

By the time U.S. students graduate from high school, they have spent an average of 703,700 minutes in a classroom—and even more if they also attended kindergarten. As educators are becoming aware, how young people spend those 12,000 or so hours is crucial to their academic success. Recent research documents the common-sense notion that students learn more when given more time to learn and when they spend that time actually engaged in academic tasks.

■ Time can make a difference

For generations, educators have sought to identify the complex variables, that, together, make for academic success. While clearly important, factors such as student aptitude and motivation cannot always be controlled by the school. Even a student's prior learning, another key influence on how well a student will do in school, can best be controlled only in the lower grades. Time and how it is spent—time on task—may well be the variable that makes the difference for students.

Time on task is an appealing concept to school administrators and teachers concerned with maximizing students' learning time and improving academic achievement. But at the same time, it can be a deceptive and complex issue.

Part of the problem lies in what Lorin W. Anderson of the University of South Carolina calls the "efficiency-expert approach" to learning time.

Traditionally, school programs are built to a large extent around time—clock time, calendar time and daily schedules. "Getting through the book" often becomes a teacher's primary goal for the year, and learning activities may be programmed with that goal in mind.

The time available for "getting through the book" may be used with impressive efficiency. But if attention is not paid to what the students actually learn in the process, achieving high time on task is a hollow accomplishment.

Despite the surface similarity of many school schedules, careful classroom observations show that the amount of time students actually spend on learning tasks varies greatly from school to school and from classroom to classroom.

For example, the Institute for Research on Teaching at Michigan State University found that students in one classroom spent a total of 84 minutes a day on reading, but their peers in another classroom in the same school devoted only 24 minutes a day to the subject. A similar disparity showed up in mathematics. In one class students spent only 28 minutes a day actively working on math, while another class in the same school spent 63 minutes.

■ It is outcomes that count

Striking as these differences are, equally important is the quality of the time and of the task on which that time is spent.

In education, as in most serious endeavors, it is outcomes that count. Hence, time spent on learning a task is only part of the issue. Another, perhaps even more important part, is the nature of the task itself.

A task, as defined in this publication, **is a goal-oriented set of activities specifically intended to produce a particular learning outcome.** According to AASA Associate Executive Director William G. Spady, "the payoff of time on task comes when the time is spent on learning tasks." Spady calls instruction that meets this standard "timely, targeted instructional delivery."

This publication will try to help school administrators understand how their decisions affect the time students have for learning. Chapter 1 presents an overview of the research into learning time and how it affects student outcomes. Clearly, research has shown a link between the time a student spends learning and the amount of learning that occurs.

Next, *Time on Task* discusses the disruptions that arise outside the classroom and their effect on learning time. In particular,

decisions made at the building, district, state or federal levels may result in unexpected limits on the amount of time allocated for instruction.

Chapters 3, 4 and 5 examine forces inside the classroom that can affect time on task: student behaviors, teacher behaviors and instructional methods.

The final chapter looks more deeply into the implications of the concept of time on task and at the roles of teachers, principals, superintendents, staff development personnel and communicators in increasing time on task in schools.

In the appendix, *Time on Task* provides suggestions on how to develop a program to increase time on task within a school district with a step-by-step checklist and observation forms.

This publication alone cannot provide a definitive answer to all the complex questions involved in time on task. But by looking more closely at the issues, school administrators can best decide how to apply time on task in their schools.

Next to people, time is the school's most valuable resource. But it is nonrenewable. Once gone, it is gone.

CHAPTER 1

RESEARCH LINKS TIME AND LEARNING

The possible relationship between time and learning has increasingly interested educators for the past two decades. A model of school learning published in 1963 by John B. Carroll, now at the University of North Carolina, proved to be a catalyst for subsequent research in the area of time and achievement. In this model, Carroll showed the link between time and achievement through a mathematical formula that could be empirically tested by others.

Carroll's formula, simply stated, illustrates that the degree of learning equals the time actually spent learning divided by the amount of time needed to learn. The parts of the equation are, in turn, influenced by other factors, specifically:

- **The amount of time needed to learn depends on**
  - —**Aptitude**, which Carroll defined not as what the student is capable of learning, but the amount of time it takes the student to learn a particular fact or concept;
  - —**Ability**, or the student's capacity to understand and incorporate the material based on prior learning; and
  - —**Quality of instruction**, or the effectiveness with which the instruction is presented.
- **The amount of time actually spent learning depends on**
  - —**Perseverance**, or the steadfastness with which students devote themselves to learning the material; and
  - —**Opportunity**, or the time the teacher allows for learning and the number of chances the student is given.

■ Aptitude is a function of time

The real contribution of Carroll's model was his redefinition of aptitude as a function of time. Once aptitude is understood not as an upper limit on what an individual can learn but, rather, how long it will take that individual to learn, the importance of time to learn becomes clear. Different people learn at different rates, and if both "fast" and "slow" students are to learn a particular concept, fact or skill, then varying amounts of time must be allocated to them.

The Carroll Model

$$\text{Degree of Learning} = \frac{\text{Amount of time actually spent learning}}{\text{Amount of time needed to learn}}$$

Amount of time actually spent learning:
- perseverance
- opportunity

Amount of time needed to learn:
- aptitude
- quality of instruction
- ability

Subsequent research on time and learning has built on Carroll's work. For example, Benjamin Bloom at the University of Chicago expanded Carroll's theory, focusing specifically on the importance of the student's prior learning and the quality of instruction.

■ Learning depends on prior mastery

In Bloom's view, students cannot perform well on a lesson unless they have spent sufficient time mastering the tasks that preceded that lesson. According to Bloom, formative testing should be carried out to determine whether each student has the necessary skills for the test at hand before proceeding with instruction.

Instruction itself, according to Bloom, has a profound effect on student learning time, which in turn can affect student achievement. In his view, the quality of instruction depends on four main factors:

- **Instructional cues,** or the particular techniques the teacher uses to convey the content to be learned;
- **Reinforcement,** or the attention and praise the teacher gives a student;
- **Participation,** or the students' involvement in instruction;
- **Feedback and correctives,** or the information a teacher gives students to let them know if they are responding appropriately to the learning task.

Inherent in Bloom's approach is the issue not only of **time spent,** but **when time is spent**—that is, the timing of each instructional step (The "timely" in Spady's concept for appropriate instruction):

- **Timing of initial instruction** through formative testing to determine whether students are ready for a task;
- **Timing of correctives,** again determined through testing, to get students on the right track if they have not mastered the content of the initial instruction;
- **Timing of guided practice,** which should follow the necessary correctives in order to reinforce learning;
- **Timing students' progress on to the next task.**

The sequence of testing, teaching, retesting and reteaching postulated by Bloom formed the foundation for the mastery learning approach to instruction. Mastery learning, discussed further in Chapter 5, affirms that most students can master required content if instruction is approached sensitively and extra time and help are provided to students as needed.

■ Teachers affect learning time

While Bloom was laying the foundations for mastery learning, other researchers continued the study of the correlations between time and learning. One of them, David Wiley of Northwestern University, began by examining data compiled by sociologist James S. Coleman for the much-debated 1966 report on *Equality of Educational Opportunity*. Looking at the data on academic achievement and the number of days students attend school, Wiley found that a longer school year correlates with higher achievement. In addition, he found that higher achievers, on the average, spend more time in school than low achievers, who tend to be absent more often.

Working with Annegret Harnischfeger, also of Northwestern, Wiley went on to conduct classroom observations of the amount of time teachers spent on various subjects. Wiley and Harnisch-

feger found that different teachers spend different amounts of time on different subjects, and that the less time spent on a subject, the less well the students tend to perform in tests in that subject.

Wiley and Harnischfeger's research led to creation of a new model, rooted in John Carroll's original conception of time spent learning, that focused specifically on the role of the teacher. In the Wiley/Harnischfeger model, teachers' activities that influence time include:

- **Planning and preparation**—the forethought that must occur before the school year begins;
- **Instructional strategies**—the types of learning settings the teacher employs;
- **Teacher capabilities**—
  - —**Planning**, or the detailed specifications and guidelines the teacher develops for the classroom;
  - —**Implementation**, or the translation of those plans into classroom strategies and activities;
  - —**Inducting**, or motivating students and increasing their active learning and task involvement;
  - —**Communication skills**, or the ability to state instructions and expectations clearly.

■ BTES looks at effective teaching

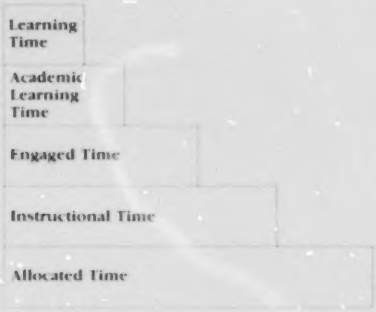
Wiley and Harnischfeger's work provided the basic assumptions for a research project entitled the Beginning Teacher Evaluation Study (BTES), funded by the National Institute of Education through the California Commission for Teacher Preparation and Licensing. This study is considered a landmark in identifying the conditions and skills a teacher needs to teach effectively.

In the early stages of the study, BTES researchers Charles Fisher and David Berliner, both of the Far West Laboratory for Educational Research and Development, drew a crucial distinction between two kinds of time involved in learning:

- **Allocated time**—the amount of time the school system or instructor sets aside for learning, and
- **Engaged time**—the amount of time the student actually spends actively learning.

As their research progressed, Fisher and Berliner added the concept of **success rate**, or the amount of information, determined by testing after instruction that students comprehend and retain as new knowledge. Together, the ideas of allocated time, engaged time, and success rate led to the Far West Lab re-

Key Concepts of Learning Time



Although the proportions above are not drawn according to a particular scale, this chart may help explain the relationship among the key concepts of learning time.

Source: William G. Spady, director, National Center for the Improvement of Learning, AASA

searchers to develop the concept of **academic learning time** (ALT). Academic learning time refers to the amount of time students are actually engaged in, and experiencing success in, learning. Success, in these researchers' view, is more likely when learning tasks are at appropriate levels of difficulty for students.

■ Key concepts of learning time develop

Despite the varying labels and models, research into the nature of learning time can, in fact, be viewed as a developmental body of work that has contributed powerful and practical concepts educators can apply to instruction. Three central concepts—allocated time, engaged time and academic learning time—merit further discussion.

- **Allocated time**, which Carroll termed "opportunity to learn," is a function of school schedule and classroom management and for that reason can be determined by policy. How many days will the school be in session? How long will each class period last? How much time should be allotted to transitional activities, such as going from class to class or from activity to activity? How much time should be allotted to the housekeeping chores of taking attendance, making announcements

and the like? Such decisions determine the amount of time that will be **available** for learning, though they in no way guarantee that the available time will actually be used for learning. Allocated time, in short, provides an upper bound on the time students may spend on learning. Increasing allocated time is considered more fully in Chapter 2.

- **Engaged time, or time on task,** is that portion of the allocated time that students spend actually studying a subject or completing assigned learning activities. Engaged time may be measured in classroom observations and is sometimes expressed as **engagement rate,** or the proportion of allocated time spent on task. Of course, students rarely if ever spend all the allocated time actually on task, so simply increasing allocated time for, say, mathematics, will have little effect on achievement in math unless engaged time on the subject is also increased. How high a proportion of the available time the students spend actively learning depends in large part on the teacher's instructional strategies and management skills, which will be discussed further in Chapters 4 and 5.
- **Academic learning time (ALT)** takes time on task one step further by postulating that the task in which a student is engaged must be at an appropriate level of difficulty so that the student can complete it successfully. If the task is too difficult, engaged time becomes floundering time; if it is too easy, engaged time is wasted time. But when the task is at the proper level of difficulty to promote success, students will tend to spend more time on task. And as numerous studies suggest, the more time students spend on task, the more they learn. (This is what Spady means by "targeted" instruction.)

■ Enough time must be available

Concerned with raising student achievement, some educators have seized the notion of time on task as a solution. Indeed, studies such as those by Jane Stallings of the Stallings Teaching and Learning Institute in Palo Alto, California, show that increasing time on task in secondary schools does lead to improved learning, especially for low-achieving students. But as David Helms of Research for Better Schools, Inc. (RBS) in Philadelphia points out, "Even if a student spends a high amount of time engaged in learning, the achievement gains might be slight if the amount of allocated time for instruction is inadequate." If, for example, the teacher allocates 30 minutes a day for reading

and the students are engaged in reading 90 percent of that time, the class still spends only 27 minutes a day actively involved in reading instruction.

■ The task itself is crucial

The central issue is not simply the time, but the nature of the task. Unfortunately, semantic misunderstandings often cloud the issue. A task is—or should be—a goal-oriented set of activities specifically intended to produce a particular learning outcome. The goal is implied in the task. Activities, on the other hand, are part of tasks or, as Anderson puts it, "vehicles by which the tasks are accomplished."

Teachers make many assignments, but their assignments frequently involve activity for its own sake rather than a task with a clear goal or outcome. The connotations of the terms "task" and "activity" may compound the confusion. To many people, the word "task" implies a menial or mechanical job—a small and relatively unimportant one at that. "Activity," on the other hand, often connotes the more positive qualities of spontaneity, playfulness, and involvement. To educators, "task" may suggest achievement, while "activity" suggests development. Because of the emphasis on child development during the elementary school years, there is a concomitant emphasis on activities rather than goal-oriented tasks. In the secondary school, the emphasis generally shifts to achievement rather than development, but the goals of the tasks assigned to students are too seldom made explicit. As a result, the act of doing the assignment becomes the goal of the assignment; covering the material becomes more important than attaining desired learning outcomes.

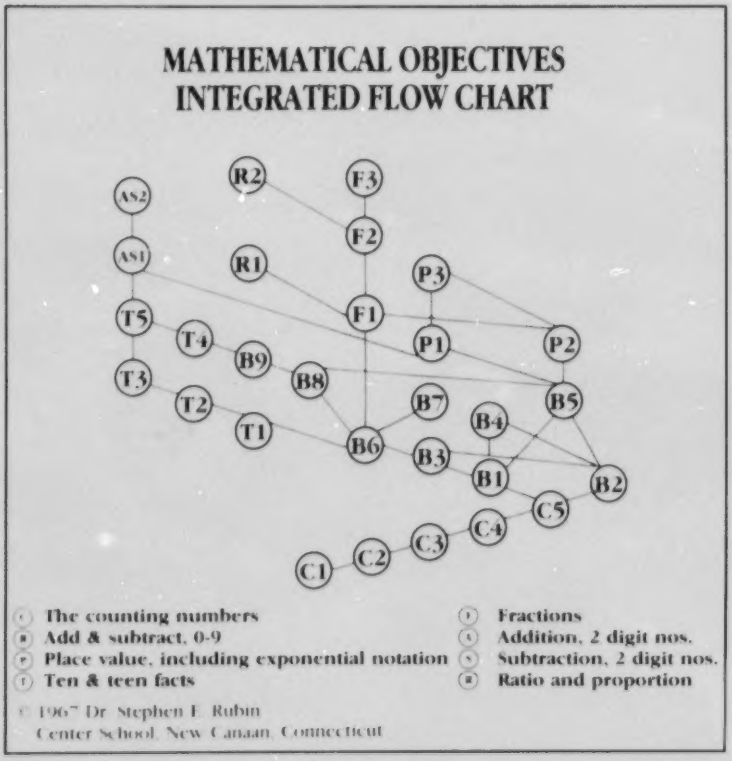
Both mastery learning and academic learning time address this problem by stressing the need for clearly defined goals and objectives. Also implicit in both approaches is recognition of the fact that students learn at widely differing rates and that success in one task often depends on success in preceding tasks. Tasks must then be chosen with individual students' learning rates and prior knowledge in mind.

■ Tasks must consider students' abilities

The Center School in New Canaan, Connecticut, has been highly successful in meeting this challenge in the area of mathematics. A cognitive hierarchy of mathematical objectives developed by Stephen E. Rubin, assistant superintendent for instruction in New Canaan, literally maps out all of the steps,

routes and sequences in the math curriculum. Rubin's math hierarchy is symbolized by a series of circles, each of which represents a well-defined set of learning objectives or outcomes. The circles are connected by lines that represent their relationships to each other. For example, a circle that is "above" another in hierarchical order represents a learning outcome that cannot be attained without first mastering the learning outcomes represented by the circles "below." The hierarchy, which reflects the steps and sequences by which mathematics is learned from nursery school through high school algebra, has been rigorously tested and validated.

By using a cognitive hierarchy such as the one Rubin has developed, teachers can easily pinpoint critical prerequisites for each objective and assign learning tasks that allow students to move from objective to objective. The hierarchy can also be used to maintain profiles of each student's progress. As each



learning outcome is attained, the appropriate circle is colored in, using a color-coded system to represent the grade level or date at which the knowledge was attained. From these profiles, the teacher can easily see which students or groups of students need more work in a particular area.

■ Tasks must also be appropriate

Several years ago, according to David Berliner of the Far West Laboratory, students at Hawaii's Kamahamaha School scored at the twelfth percentile on national achievement tests. When a program to increase their time on task was put in place, their engagement rate climbed to 90 percent of allocated time. Subsequent tests, however, showed no increase in achievement levels. The problem, Berliner reports, was that the students—most of them low-income Hawaiian and Samoan families—could not relate to the curriculum materials used in the school. They were spending time on task, all right, but on the wrong tasks. The solution was a curriculum that included Hawaiian-based stories and a story-talk teaching strategy. Using these materials, the children's retention levels and success rates increased, and test scores, on the average, rose to the seventieth percentile.

Other cases are not necessarily so dramatic, but the message is clear: Time on task is only one aspect of the larger picture of how time and learning are linked. Teachers and school administrators who seek to influence learning outcomes by controlling the important variable of time must take into account not only **how much time is actually spent on learning, but also how much time is made available** and finally, **the nature of the tasks** on which students spend their time.

Equally important, educators must realize that these concepts of time and learning constitute a tool for analyzing instructional problems—not a rulebook for the "right" instruction. Berliner himself emphasizes that "academic learning time was never intended to be a prescription for instruction. Instead, it is one form for diagnosing the problem so that teachers and administrators can implement a working program that will increase time on task."

CHAPTER 2

OUTSIDE INTERRUPTIONS TAKE TIME

Teachers and administrators who analyze time on task in their schools are often surprised—and dismayed—to see how much learning time is lost to outside interruptions. In particular, policy decisions made at the building, district or state levels may result in unexpected limits on the amount of time allocated for instruction and may even mandate specific interruptions of that time.

■ Researchers look beyond the classroom

Until recently, most researchers concentrated on observing in the classroom to determine how much time is spent on actual learning. But now, researchers are looking beyond the classroom walls to the school building, school board and community—even to the courts and the state and federal legislatures. As a result, a new question has been added to the research agenda: How much of the time available for learning is controlled outside the classroom—even outside the school building?

Teachers are responsible for keeping students engaged in learning tasks. And principals can affect time available for learning by the policies they set. But often, a principal can increase allocated time only with the cooperation of the school board, the community, the courts and the legislatures. These various forces from outside the classroom influence allocated time in various ways:

- Scheduling of breaks, announcements and special programs that decrease the instructional time during the school day;

- Back to basics movement;
- Resources set aside for actual instruction;
- Length of the school day and the school year;
- Inclement weather policies that may decrease the length of the school day or year;
- Class size; and
- Special programs mandated by the courts or the state or federal legislature.

■ Scheduled breaks cut into the day

A recent study conducted by the San Diego, California, City Schools reported that scheduled breaks in the school building day cause as much loss of time on task as do teachers' and students' classroom behavior.

In a separate study, Annegret Harnischfeger of Northwestern University found that two schools in the same district scheduled lunch periods of different lengths. One school, which sent its students home for lunch because the building had no cafeteria, allowed a full half-hour more for lunch than did the second school, where lunch was served in a cafeteria. Yet, the school with the shorter lunch period actually lost more time on task because the students did not have time to eat their lunches and return to class before instruction began.

The principal should consider the length of time allocated for lunch. Before deciding whether the lunch period is long enough, the principal should consider these questions:

- Do the students have enough time to go from their classrooms to the lunch room?
- If the lunch is served in a cafeteria, do the students have enough time to stand in line, wait to be served and then eat their meals?
- Do they have enough time to clean up their eating areas after lunch?
- Do they have enough time to go the restroom if necessary?
- Do they have enough time to return to their classroom?

If the principal has not scheduled enough time for these needs, then the lunch period will in fact be extended by the amount of time the children actually need to complete all of these tasks. Because the extra time has to come from somewhere, the time allocated for instruction will suffer.

Students may also lose valuable instructional time due to poor scheduling of recess. In some buildings, principals schedule recess at 10 a.m. and lunch at 11 a.m. The students come back

from recess around 10:15, take 15 minutes to settle down and receive only 30 minutes of instruction before they have to go to lunch. If the principal scheduled an earlier recess and a later lunch, the students would have more time to spend on task. Principals who suspect that this problem exists in their schools should consider the following:

- What time is recess scheduled?
- What time is lunch scheduled?
- How much time is allocated for learning between lunch and recess?
- Does this time leave enough room for any necessary transitional activities?
- Do teachers feel comfortable with this schedule?

If children do not have enough time between recess and lunch, their play time bleeds into their instructional time. Even teachers who are good managers and can direct the students on task easily will still not have enough time left to accomplish much in the way of instruction.

■ Announcements disrupt classrooms

During classroom observations, Jane Stallings of Palo Alto, California, found that one of the most common classroom disruptions was indiscriminate use of the intercom. Rather than schedule a particular time of day for announcements, some principals broke into instructional time as soon as there was something to announce—important or not.

Stallings also found that school personnel sometimes walk into a classroom to ask the teacher a question about a specific event, such as that evening's parent meeting. Like the unscheduled use of the intercom, such interruptions decrease the amount of time students spend on task and make it harder for teachers to get them back on task.

According to Stallings, both practices send students a hidden, but unfortunately well-received, message: "Any time someone enters the classroom with a noninstructional message or interrupts a class through the use of the intercom," said Stallings, "students perceive that their instructional time is not valuable."

Principals can limit the amount of time spent on announcements by designating a few minutes every morning for the use of the intercom. Messages for particular teachers can be delivered in person between class periods or during some regularly scheduled break in the school day, such as recess or lunch.

■ Timing affects pull-out programs

Programs that require students to leave their regular classrooms for any length of time can have a negative effect on time on task, according to Annegret Harnischfeger and C. L. Hutchins, deputy director of the Mid-continent Regional Education Laboratory (McREL), if they do not take into account the regular classroom structure.

For example, a student who needs remedial help in mathematics may be pulled out during the classroom's scheduled reading period. The student misses the regular reading period and, perhaps, part of the math class, too. Without coordination between the special teacher and the classroom teacher, the student will have lost valuable time in reading and may still be behind the rest of the class in math.

Although these programs may be mandated by law, the disruption can, to a large extent, be controlled. The key is for the principal, special teacher and classroom teacher to sit down together and coordinate schedules. Once this has been done, the special teacher can arrange to take students out of class at the least inconvenient times. One method that has worked well in some schools is for the special teacher to work with the students involved in a small group at the back of their regular classroom.

■ Back to basics means changes

The "back to basics" movement and recently mandated minimum competency tests have led some schools and school districts to place greater emphasis on basic-skills learning. That emphasis often shows up in the school's schedule, causing many teachers to fear that time for rote learning will replace time for conceptual learning.

■ Resources can restrict time available

In a time of budget cutbacks and reductions in force, the allocation of instructional resources becomes more important than ever. In the face of declining enrollments and tax initiatives such as California's Proposition 13 or Massachusetts' Proposition 2½, many districts are forced to curtail expenditures in such vital areas as teacher salaries, instructional aides, inservice programs and curriculum materials and development. These areas, however, are often the keys to increasing time on task and getting more from each instructional dollar.

- **Teacher salaries.** Some feel that the combination of low

salaries and the lure of the corporate world is creating a high rate of turn-over among experienced teachers, especially in the fields of math and science. RIFs and job reassignments also take a toll. One Maryland social studies teacher was assigned to teach science in addition to social studies because the district budget did not allow for hiring a new science teacher. The teacher and her social studies students lost valuable instruction time while she was learning the material and developing the curriculum for her new science class.

- **Instructional aides.** Instructional time lost to record keeping and other managerial tasks could be minimized with the help of instructional aides. Aides can also correct papers, supervise students who are doing seatwork or watch the class while the teacher works with a small group. In some schools, however, use of instructional aides creates a political football. Teachers' unions are sometimes very cautious about any sign that noninstructional personnel are doing work that should be done by teachers. Principals also sometimes create problems by not allowing teachers enough autonomy in deciding how to use the aides or by not involving teachers in developing the aides' working schedule. The school—and the students—can definitely benefit from the use of instructional aides, but because the aide's effectiveness depends in large part on the teacher's management, communication and human relations skills, both aide and teacher should be evaluated regularly to see how effectively they work as a team.
- **Inservice programs.** Although the AASA survey for this publication identified poor teacher management skills as a factor in lost time on task, many states are now decreasing their financial commitment to inservice training for teachers. Holding teachers responsible for effective classroom management—including the management of time—and then not providing the necessary training in needed management skills is short-sighted. As experienced teachers leave the profession and as the funds for other instructional resources dwindle, teachers need comprehensive programs to sharpen their management skills. Funds for such professional development could be crucial for an effective school system.
- **Curriculum materials and development.** Increasing time on task is worth little if the students are engaged in inappropriate tasks, which raises the question of curriculum development and selection of materials. In particular, schools using a mastery learning or outcome-based instructional ap-

proach may need to review and revise their current curricula in light of the academic goals they want to achieve and the specific objectives they have set for student achievement. Curriculum review is also necessary to assure that the materials are interesting enough to motivate children and that they provide a wide enough range of difficulty or complexity to suit each child's learning pace.

■ School day and year set limits

The ultimate limits on available learning time are the length of the school year, usually determined by the state legislature, and the length of the school day, occasionally affected by negotiations between the local school district and the teachers' union. Most school years are in the neighborhood of 180 days in length, and most school days average about 5½ hours. If as much as 2½ hours are lost each day to off-task activities and behaviors, simple arithmetic shows that students are getting less than 100 days of instruction out of the scheduled 180.

Because of budgetary constraints, some states are seeking ways to decrease the number of school days per year. Some Colorado schools, for example, are experimenting with a four-day school week. The time lost is balanced by increasing the length of the school day.

Other states are looking in the opposite direction. In California, recent reports that total class time in the state's public schools falls short of national averages prompted legislation that would extend the school year from its current minimum of 175 days to 180. Other legislation would increase the minimum length of the school day.

■ Inclement weather confuses schedules

In areas prone to heavy storms, inclement weather can have a dramatic effect on the amount of time available for instruction. Frequently, a district will delay the opening of school for an hour or more to accommodate bad road conditions caused by a storm. Because the schools are open for most of the day, the state does not view this as a lost day for the district. Unfortunately, the same subject or program is often scheduled for the first hour every day. Each day that schools open late, that subject is missed, and there is seldom time to make it up. A revolving schedule that changes the first-period class every day will equalize lost instructional time among the various subjects.

Handicapped students often suffer disproportionately from

the effects of inclement weather policies. Although schools may open during bad weather, transportation for handicapped students may not be provided. The school may lose one hour, or none at all, but handicapped students may lose an entire day.

■ Smaller classes create mixed results

Evidence of the relation between class size and time on task is contradictory and often controversial. In her work with migrant children, Elizabeth Cohen of Stanford University emphasized conceptual learning by increasing time on task with the aid of peer group interaction. Both teachers and instructional aides were taught managerial skills to supplement their teaching abilities. It was Cohen's conclusion that the teacher's managerial skills—not the size of the class—made the difference in time on task.

This conclusion was contradicted in two studies conducted by the Far West Laboratory for Educational Research and Development. In the first, Stanley Chow found that when learning-disabled children were mainstreamed into smaller classes, their time on task increased.

The second study, conducted by Leonard Cahen, was designed to determine the relationship of class size to student achievement. Cahen and his colleagues studied two classrooms, one in California and the other in Virginia, each of which had approximately 30 students. During the first half of the school year, team members observed the two classrooms, paying particular attention to teaching strategies. After the winter vacation, each class was divided in half and two new teachers were brought in to supplement the original teachers, who continued to be observed by the research team. According to Cahen's findings, the original teachers were able to increase their students' time on task without any special training simply because the second-semester classes were smaller.

■ Mandated programs can be managed

When students are removed from class for federal, state or other pull-out programs, as mentioned earlier, they may lose valuable instructional time in one area while receiving extra help in others. Careful scheduling to minimize disruptions can often save surprising amounts of time for the students involved and for their classmates.

CHAPTER 3

STUDENTS PLAY CRITICAL ROLE

Although the total amount of time available for teaching and learning is determined by a host of forces outside the classroom, it is still up to the teacher and the students to make sure that time available is used as efficiently and effectively as possible. The total **quantity** of time available is primarily a function of administrative and legislative policy; the **quality** of that time, on the other hand, is a function of student behaviors, teacher behaviors and instructional methodologies. (See the chart on page 33.)

■ Discipline problems decrease teaching time

According to the AASA survey for this publication, teachers identify student discipline problems as the single greatest factor in decreasing time on task in the classroom. When a student misbehaves, the teacher often takes time away from instruction to reprimand the student. The disruption pulls other students off task, making them shift their focus from the learning task to the source of the disruption. And once the students are off task, the teacher must exert even greater effort to redirect them to their initial level of engagement. A single, brief incidence of misbehavior, then, can cause many wasted minutes.

However, disruptive student behavior can be defined in many ways. What might seem disruptive to a teacher lecturing to an entire class might not seem like a problem when students are working in small groups. Steve Bossert, now at the Far West

Laboratory, studied this phenomenon in his dissertation research. He found that often teachers take themselves off task by over-reacting to a student's behavior.

Student misbehavior can have many causes, including poor attitude toward school, lack of motivation for learning, problems at home or inconsistent school discipline policies. The latter is particularly important. Jane Stallings of the Stallings Teaching and Learning Institute has found that when simple misbehavior escalates into a discipline problem, there are two primary reasons: lack of classroom management skills on the part of the teacher or lack of support from the principal. More specifically, according to Stallings and other observers, in schools where teachers and principal have jointly developed a discipline policy that is clearly stated and consistently adhered to, student discipline problems decrease.

To develop such a policy, Stallings recommends that teachers and principals meet together to determine school rules and the penalties for infractions. The teachers then post the rules for behavior, written in black ink, on the classroom bulletin board and next to them the penalties, written in red ink. Students who question a particular rule violation and the subsequent penalty can be directed to the posted information.

The keys to the success of this system are, first, that the principal agrees to and supports the rules and penalties and, second, that all the teachers in the school use the same standards of discipline. Having a consistent schoolwide discipline code can save a good deal of time that might otherwise be wasted in arguing with a student about the fairness of a particular disciplinary action. If each classroom in the school sets its own standards, the misbehaving student can point to the discrepancy between classes and try to manipulate the teacher into changing the disciplinary action.

As important as having a schoolwide code is communicating that code to students early on. Studies on classroom effectiveness conducted by Carolyn Evertson of the University of Texas' Research and Development Center for Teacher Education indicate that teachers who spend the first week of class reminding the students of school rules and reinforcing the penalties have fewer discipline problems as the year goes on. With young children, Evertson suggests that the rules and penalties be rehearsed a number of times.

■ Absenteeism takes its toll

Student absenteeism plays a critical role in decreasing actual learning time for the students involved. Each time a student misses class, the teacher has to repeat the assignment and review any material covered while the student was not in class. Absenteeism can also cause motivational problems that affect time on task. Students who have been gone for a number of days may feel left out of the classroom social system and develop an attitude of "why try to catch up." It's important for the teacher to take time to bring these students back into the mainstream of the classroom.

Although absenteeism may appear to be beyond a school's control, principals who initiate special programs to combat it are often highly successful. One principal, for example, decided to let classes compete against each other for high attendance records. Each month, the winning class received a field trip. By the time the program was fully operational, attendance had increased dramatically. Students were urging their classmates to attend school, and teachers were reinforcing this behavior with their own desires to win.

The Houston, Texas, Independent School System has developed an ambitious program to increase students' academic strengths by building sound work habits and increasing students' sense of responsibility. An absenteeism program plays an important part in this effort. During the final year or two of school, seniors and those juniors whose academic credit rating qualifies them as seniors (this amounts to more than one-half of the number of juniors) can be exempted from final examinations in each course in which they have earned a grade of B or better, have received no conduct grade lower than satisfactory and have fewer than three absences.

Another portion of the Houston attendance policy links absences with academic credit. For secondary students, the first unexcused absence after six absences, both excused and unexcused, means a loss of credit for that particular grading period. In grades 6, 7 and 8, students are allowed 12 excused and unexcused absences per grading period before losing credit. Claude Cunningham, assistant superintendent, feels that both programs throw the responsibility for attendance back to the students, where it belongs. Students are rewarded for a good attendance record or penalized for excessive absenteeism.

Although only three years old in 1982, the program's impact became clear. Student attendance increased from 86 to 92 percent of total student enrollment.

Many schools have found direct contact with parents to be a successful way to combat absenteeism. In many schools, at the end of the day the principal receives a computerized list of the students who were not in school that day. Volunteers call the parents of these students to find out why they did not attend class. Frequently, the call is the first indication for parents of the student's absence, and the knowledge may encourage parents to take a firm stand on school attendance.

All of these programs—and similar ones devised to combat tardiness, another enemy of time on task—require the support of the entire faculty. And when on-time attendance is rewarded, the response from both teachers and students is likely to be enthusiastic.

■ Ability, aptitude and achievement play roles

The amount of time a student is willing to devote to a task depends to a great extent on ability and aptitude. Some studies indicate that students in the lower five percent of their class take at least five times longer to learn a subject than do students in the top five percent. This difference in learning rate means that students will comprehend the content of a lesson to varying degrees. And when students have trouble understanding a lesson, their motivation to learn sinks.

Both mastery learning and the concept of academic learning time address this phenomenon—mastery learning through the premise that all students can learn, given enough time; and the concept of academic learning time through stressing the importance of choosing tasks that lead to success.

Prior knowledge also plays an important part in a student's ability and motivation to learn. Without what Benjamin Bloom calls the necessary "cognitive prerequisites," students have no frame of reference into which they can fit new concepts and are hence less able to understand and retain new material.

It is the teacher's responsibility to diagnose the student's prior knowledge and tailor instruction accordingly. In addition, as instruction progresses, the teacher should conduct frequent formative assessments to determine how much new information has been retained and what needs to be taught again.

■ Rewarding on-task behavior helps

In the Vance County, North Carolina, Schools, officials decided to use a time-on-task approach to improve the effectiveness of their Title I program. Students in the program spend part of each day in a time-on-task classroom staffed by a teacher and an aide. About one-fifth of that time is spent in group instruction and the rest in individual work assignments. The students earn points for remaining on task and lose points for off-task behavior. Accumulated points can be exchanged for tangible rewards, such as puzzles or games, or for participation in a social activity, like bowling or a movie.

Classroom Factors that Affect Learning Time

Students

Personal Behavior
misbehavior
absenteeism
tardiness

Psychological Traits
aptitude
ability
prior knowledge
motivation

Teachers

Personal Behavior
managerial skills
preparation
organizational
ability to
implement
strategies

Teaching Strategies
seatwork
individual instruction
groupings
whole class direct instruction
mastery learning
peer group tutoring

Special Cases
pull-outs
interruptions

CHAPTER 4

TEACHERS MUST BE GOOD MANAGERS

How well the teacher manages the work of the classroom—both instructional and noninstructional—is another key factor in the use of time. Many of the school administrators surveyed by AASA for this publication believe that teachers often do not plan thoroughly enough and, as a result, are sometimes disorganized.

While teachers have traditionally seen their role as primarily instructional, it is clear that, to be effective, they must also be good managers. In addition to a sound knowledge of content and instructional methodologies, teachers must also be able to plan their academic program, organize time and materials, maintain student on-task behavior and generally teach students in an effective and efficient manner.

■ Planning ahead can help

Preplanning—or the planning the teacher must complete before the academic year begins—is one of the teacher's most important managerial tasks. Specifically, when teachers assess the coming year, they should ask the following questions:

- What are the current levels of knowledge and skill of the members of the incoming class? (Some of this information can be found in the students' files and achievement test scores, but pretesting is usually the most accurate assessment.)
- What areas of learning are deficient?
- What materials and instructional methods will best fill the gap?

Although these questions may sound deceptively simple, their importance to effective classroom management cannot be overestimated. According to John R. Champlin, superintendent of the Johnson City, New York, Central School District and winner of the 1982 AASA Leadership for Learning Award, "If children are not spending enough time on task, then there is no doubt that the teacher's planning has been weak. Diagnosis or prescription cannot be an on-the-spot decision or a miraculous cure. It comes from the teacher's ability to know and anticipate what information the students need. This knowledge can only come from planning."

■ Organizing the classroom may be a key

Classroom organization also has a great impact on the time students are engaged in learning. Without an organized classroom environment, students will be confused about classroom leadership and procedures. Studies conducted by Carolyn Evertson of the University of Texas at Austin suggest that the teacher's effectiveness as a leader is directly proportional to the teacher's ability to present a clear schedule for the day. Furthermore, according to Evertson, the teacher's leadership and organizational abilities must be clearly established in the first few days of the school year. To that end, Evertson suggests that teachers do the following:

- Learn all the students' names;
- State the school rules and procedures clearly (don't just post the rules and assume students will read them);
- If the students are young, spend some time drilling them on the rules and procedures; and
- Review the locations of various items or rooms, e.g., the storage area, the pencil sharpener, the water fountain and the restrooms.

This form of acculturation may seem important only for students in the first few grades, but it is just as important for secondary school students. Students of any age need to learn who is in control of the classroom and how much leadership the teacher can be expected to provide.

David Berliner, on the other hand, stresses that teachers must use caution when they concentrate on acclimating students to their new environment in the first few days alone. During the school year, many new students enter school and others move or drop out. In those instances, the teacher must spend some time bringing new students up to par with the rest of the class.

If the teacher doesn't do this, the new student will have difficulty knowing where to begin to be on task for a lesson. Berliner gives the example of one school teacher who, once the school year was in progress, assumed that her verbal shorthand was clear to all the students. If she wanted to teach science, she would just simply clap her hands and say, "Science!" Students who had been in the classroom since the beginning of the year knew she meant they were to open their science books to the page following their last lesson. A new student in the classroom would have no way of knowing what a teacher meant, and a student who had just returned from an absence would not know what page to look for in the book.

By developing a clear, organized structure the first few days of class and continuing it throughout the year, the teacher removes any feelings of nebulousness the students may have. The students will know that the teacher is determined to exhibit leadership . . . and discipline, when necessary.

Jane Stallings recommends that teachers ask themselves the following questions as they prepare to organize their classrooms:

- How soon after entering a classroom are students informed of the day's assignments?
- Are the students told the kind, amount and quantity of work that is expected during the period?
- Is the work assigned so that, for each period, students know what is expected of them and can leave with a feeling of accomplishment?
- Do students know how materials are distributed in class and what materials they must bring to class?
- Are the penalties clear for not having the proper materials?
- What procedures are established for students to receive help or reinforcement for their work during the period?
- Do students know where to sit, what group they are in, when to work alone and when to work with a group?
- Are students aware of the teacher's expectations regarding their behaviors?

Although these recommendations arise from Stallings' extensive work with secondary school systems, they are most likely also useful in other grade levels.

■ Making assignments seems simple

When students enter the classroom, Stallings suggests that teachers develop a strategy for informing them immediately of the day's assignments.

As soon as the bell rings, the teacher can call attention to the assignments. By communicating the assignments clearly to the students as soon as possible, the teacher saves quite a bit of time during the transition from class to class or activity to activity and steers the students on task as quickly as possible.

When giving assignments, teachers have better results if they clearly state the activity's educational objectives. The more the students know about the purpose of a lesson, the greater their interest level and ability to retain the material. Students want to know the material is important to them, and those who are not informed of the objectives often lose interest.

Educational objectives are not the only thing to consider when making assignments. When teachers give instructions, they should also state their expectations about the quality of work. Again, Stallings has suggestions:

- Teachers should state the expected quality of written assignments.
  - —Should the students write in complete sentences?
  - —Will they be expected to use correct punctuation?
- Teachers should state the students' responsibility for completing the task.
  - —What happens if the task is not completed?
  - —What should the students do once they complete the task?
  - —Should students correct each other's assignments while waiting for the teacher?

The transitional period between assignments is a major area of lost time. A well-organized teacher clearly tells the students what they should do when they have finished one assignment and are waiting to begin another.

■ Team planning decreases time off task

In the Johnson City, New York, Central School District, where groups of 75 or so students form a "family" with three or four teachers, the teaching teams found that a good deal of time was taken up in transition among team members. By careful examination of schedules and close attention to classroom management, some 20 minutes of instructional time was gained each day. Teams also built review of prior learning into their instruction, rather than setting aside separate time for it, thus reducing the total amount of time spent in review.

CHAPTER 5

EFFECTIVE TEACHING KEEPS STUDENTS ON TASK

Through classroom observation, many researchers have found that actual teaching strategies have a definite effect on the amount of time students spend on task. Most teachers use a combination of strategies, including seatwork, whole-class instruction, mastery learning, individual instruction, subgroupings or peer interaction. By far, however, the most common is seatwork, which generally accounts for 60 to 75 percent of instructional time. Yet in some studies, students doing seatwork averaged an engagement rate of only about 70 percent of allocated time, whereas in whole-class instruction, their engagement rate averaged as high as 84 percent. Choosing a teaching strategy that is appropriate for instructional content and student learning styles and at the same time is one that produces a high level of time on task, is a crucial decision for the teacher.

■ Seatwork can take students off task

Some observers believe that many teachers lean too heavily on seatwork as a means of keeping students occupied so that the teacher can spend time working with small groups or completing routine managerial duties. Seatwork does not always lead to high levels of off task behavior. But it can if:

- Students are not given clear instructions;
- The same seatwork is given to students of all ability levels, which means that the brighter students complete the work

sooner and have to sit and wait for the next assignment; or

- Students who have questions are either too insecure to ask the teacher or the teacher is too busy with other groups to respond to them.

Seatwork is more likely to be successful when the teacher spends time walking around the classroom to observe the students and answer any questions. Another way to increase time on task during seatwork is to have another assignment ready to be begun when the first one is completed. A valuable reminder is stressed by David Berliner: "It's important to have children who work independently, but we haven't given them the skill to do so. Until children learn to work independently, this type of work can become a waste of time."

Seatwork is timely and appropriate instruction only when it is at a level that allows students to learn, not just practice. This distinction between practice time and learning time is critical, according to William G. Spady, director of AASA National Center for the Improvement of Learning.

■ Individual instruction gives uneven results

Individual student instruction can take many forms, including seatwork. The defining characteristic of this teaching strategy is interaction between the individual student and the teacher that elicits continual feedback in terms of correction or reinforcement of the student's work. While individual student instruction usually increases time on task for the student involved, it may have a detrimental effect on the engaged time of other members of the class.

For example, in many schools the time allocated to one class period is about 50 minutes. If there are 25 students in the class, the teacher has approximately two minutes to devote to each student. But rarely is the teacher's attention so equally distributed throughout the class. More often, the teacher spends more time with those students who attract attention or appeal to the teacher's ego. Usually the brightest students and the most disruptive most often attract the teacher's attention. Although they need the teacher's individual attention every bit as much as their more vocal classmates, the quieter and slower students are often inadvertently ignored. The result, according to Jane Stallings, is that when teachers give a great deal of attention to only certain students, time on task and academic achievement for the class as a whole will suffer.

■ Groupings test teaching abilities

Small-group instruction—founded on the premise that the smaller the class, the easier it is to increase time on task—may in fact have the opposite effect. Recent studies by Michael Rutter and others suggest that this strategy can actually lead to decreased motivation among certain students. In his recently published study *Fifteen Thousand Hours*, Rutter stresses that ability groupings can have a depressing effect on low achievers and do not help high achievers significantly. Jane Stallings, working with secondary school students, suggests that instruction be given first to the entire class and then retaught and clarified in smaller groups.

The greatest danger of groupings is the academic pecking order they frequently create. Students who feel that they have limited abilities may find themselves always at the bottom of the group. Teachers may base their own expectations for students on their place in the group structure and spend more time with advanced groups. Stallings and Rutter suggest that teachers consider the following when they work with groups:

- That the same student is not always at the bottom of a group;
- That the purpose of a group is to increase a specific skill, and not to isolate students on the basis of academic performance; and
- That the group be dissolved once the goal is attained.

Groupings also test the teacher's management abilities. While the teacher is working with one group, the rest of the class has to be kept on task. This can be accomplished by assigning students alternative activities once they complete their assignments or by using a teacher aide to assist the class. Some teachers solve the problem by positioning themselves so that they can watch the rest of the class. If the teacher has more than one group working in the classroom, the two groups should not face each other or be positioned in a way that they can distract each other.

■ Teams can keep students involved

In a report of the National Association of Secondary School Principals, Lorin Anderson of the University of South Carolina, gave an example of a way student teams can be effective.

When observers in high school math classes in Pontiac, Michigan, saw the high levels of time on task that resulted when students were formed into competitive teams, they were im-

pressed by the fact that even the most reluctant students became actively engaged in team study sessions. Team learning is now being used in three Pontiac schools, where the emphasis is on game-like competitions among teams. The teams are racially mixed and include both high- and low-achieving students. Formal evaluation of the program will emphasize time on task as well as achievement and cooperation.

Robert Slavin of the Center for Social Organization of Schools of Johns Hopkins University, has studied the effects of student team learning. Unlike students receiving other kinds of nondirect instruction, students involved in learning teams have a high engagement rate.

■ Direct instruction has advocates, critics

Research about time on task has led certain educators into the advocacy arena. Some assert that direct instruction is the only means of maintaining time on task and increasing student achievement. The premise behind direct instruction is that the students must have actual contact with the teacher during the instructional period. In good direct instruction, teachers:

- Focus on specific academic goals;
- Promote extensive content coverage and high levels of student involvement;
- Select instruction and materials that match the goal and actively monitor student progress;
- Structure learning activities and give immediate, academically oriented feedback based on explicit assessment of the learning goals; and
- Create an environment that is task oriented but relaxed.

The advantage of direct instruction is that the teacher is constantly monitoring the entire group and can bring the students back on task when their attention wanders elsewhere.

Direct instruction has its problems, however. If the class is too large, the teacher may have difficulty monitoring all the students. And unless the mastery learning approach of testing, teaching, retesting and reteaching is used, teachers cannot tell if the students are learning successfully. Critics of the direct instruction approach also argue that it stresses rote learning rather than conceptual learning, but advocates counter that the kinds of skills fostered depend on how the objectives are written and assessed.

■ Mastery learning monitors student progress

Rooted in the work of Benjamin Bloom, mastery learning is both a philosophy of how students learn and a related set of instructional guidelines. The philosophical premise of mastery learning is that virtually all students can learn if they are given the time and help they need. From this premise arise the key elements of a mastery learning program, as outlined by James Block of the University of California at Santa Barbara. Those elements include clear and explicit:

- **Instructional objectives,** or statements of what the students are to learn;
- **Brief learning units** organized around sets of related objectives;
- **Highly valid formative tests** used to assess student learning pertinent to the instructional objectives;
- **Predetermined levels of performance** on these tests indicating "mastery" of the underlying objectives;
- **Communication with the students** about what they are expected to learn and how they are to learn it;
- **Additional learning activities or materials** (correctives) for students who fail to attain preset levels of performance;
- **Monitoring of these correctives** and administration of additional formative tests until virtually all students have met the performance standards;
- **Use of cumulative or summative tests** to assign grades;
- **Assignment of grades on the basis of summative test performance,** based on preset standards, rather than on the basis of comparison with the performance of other students.

Central to both mastery learning and direct instruction are the following elements:

- Clearly defined goals and objectives,
- Communication of expectations to students,
- Direct teaching to those objectives,
- Monitoring of student progress and performance.

Several years ago, the Denver, Colorado, Public Schools began a mastery learning program aimed at improving student achievement and attitudes. One key element of the program is staff inservice that stresses classroom management techniques in addition to mastery learning concepts. Teachers are trained in skills and techniques likely to increase time on task, and results show that it's working. Not only have student achievement and attitudes improved, but time on task has increased.

A major contribution of mastery learning is the emphasis on corrective activities to ensure that errors or misunderstandings are not perpetuated.

Another difference between the two, and a source of some controversy in the field, is that in direct or whole-class instruction, students move as a group or subgroup from one objective to another.

In mastery learning, on the other hand, the curriculum is defined by what the individual student has mastered. As S. Alan Cohen of the University of San Francisco puts it, "Students move continuously through the curriculum, mastering each step along the way. The rate of learning is determined by the rate of demonstrated mastery. Grade levels and assignments don't restrict a student's progress." In a mastery learning curriculum, according to Cohen, "everyone gets an *A*, but some may get it faster than others."

Like direct instruction, mastery learning has its share of critics, many of whom charge that by breaking down content into small, discrete steps, mastery learning rewards the acquisition of fragmented knowledge and skills rather than important "higher order" behaviors such as analysis, synthesis and evaluation.

But despite these criticisms, experiments on the effectiveness of mastery learning suggest that it does tend to increase time on task and lead to higher levels of achievement. Even more intriguing is the possibility arising from some studies that students in mastery learning programs tend to require progressively less allocated time in order to achieve the same performance levels over a series of learning units. In other words, mastery learning may foster in students the ability to manage their own learning time more effectively.

■ Peer interaction motivates students

Several years ago, Elizabeth Cohen and Ed de Avila, both of Stanford University, developed an educational program for migrant children based on work originally done by de Avila. The program, in which teachers acted as both instructors and facilitators, made extensive use of learning centers. The children would move from center to center once their work was completed. If they had questions about the assignments, the students could ask either the teacher or a classmate for help. All the students were instructed to help each other if they knew the answers to their classmates' questions.

According to Cohen, "An observer walking into the classroom

may not feel that the students are learning if they interpret time on task to mean students sitting quietly while the teacher is reciting. However, the degree of the engagement rate is based on the percentage of time the student is actively learning. Once the observers start listening to the conversations of the students, there is no doubt that they are on task. The most important advantage to peer interaction is that the students are more motivated to learn and spend more time actively learning."

De Avila stresses that peer interaction differs from peer group tutoring. "Peer group tutoring means that one student is instructed to guide the others in a learning task," says de Avila. "The only student that really benefits in that instance is the leader. And, the major reason the student benefits is that he or she has to use cognitive knowledge in order to instruct."

Both de Avila and Cohen stress student interaction during instruction as one important component in increasing time on task and ensuring cognitive learning. Further, they say, it enables students to receive immediate feedback on how much knowledge they have acquired. Teachers also benefit from peer interaction because they can oversee all students and help those who require special attention.

■ Homework may require supervision

Whether homework can be used to increase time on task is a concern of both teachers and administrators. Although homework assignments usually mean more time will be spent reading and studying particular portions of the content material, Ed de Avila raises some serious concerns. Homework is often unsupervised instruction. If the students know the material before they leave school, they will be able to complete the homework assignment correctly. If not, however, they will need supervision and guidance at home. Without this guidance, they will continue to make the same errors, and, rather than learning the material, they will simply perpetuate their misunderstanding.

Annegret Harnischfeger, on the other hand, stresses the importance of homework. If teachers exhibit proper supervision over the completed assignments, she believes, homework can be a valuable diagnostic tool. For example, if a number of students turn in material that is consistently wrong in the area of, say, punctuation or fractions, the teacher can plan additional instruction on those skill areas. However, the homework turned in by students must receive the attention of the teacher to become an effective instructional activity.

■ Teacher expectations affect choices

Although the particular strategy a teacher uses may be determined by the principal, it is more often a function of the teacher's expectations of student abilities.

Teachers' expectations can increase the engagement rates of students, according to C.L. Hutchins of the Mid-continent Regional Education Laboratory (McREL). Teachers expect that students will be engaged in learning tasks. They communicate that expectation, and the learners respond by becoming more engaged. But when teachers have lower expectations, they often don't structure enough time for the students to learn.

According to various studies gathered by McREL, teachers' expectations also affect the amount of feedback students receive, the amount of time teachers spend with the students and even the seating arrangements in the classroom. In some cases reported by McREL, low achievers were seated in the back of the room while the teacher focused attention on the brighter students sitting in front. In other instances, the teacher used the chalkboard closer to the brighter students rather than the one across the room. During actual interactions with the teacher, slower students were ignored more often than their brighter classmates. Some researchers feel that this occurs because bright students know how to attract the teacher's attention; other researchers feel that teachers are embarrassed when they try to relate to a student who cannot readily respond.

Another cause may be unconscious socioeconomic, cultural or racial bias on the part of the teacher. In our society, educators tend to place particular importance on verbal ability as an indicator of intelligence. Students with low verbal ability are often assumed to be unintelligent. Such assumptions are particularly common with students whose vocabulary and speech patterns do not reflect the accepted classroom norms because of differences in cultural or ethnic background. If a teacher assumes that such students are less intelligent than their peers, the teacher's expectations for those students will be lower.

Teachers should examine their attitudes and expectations and try to become aware of their personal biases. Such questions as these may be helpful:

- Are the brighter students assigned to seats in one particular area of the classroom?
- Does the teacher tend to call on the same students again and again and respond more attentively to queries from those students than from others?

- During instruction, does the teacher tend to stay in one area of the classroom or move from place to place?
- Is the time spent on individual student instruction divided as equally as possible among all the students?
- Are rewards such as verbal reinforcement or special privileges distributed fairly evenly throughout the class?
- Do the same students always end up in the same relative positions in ability groups?

Teachers who have good classroom management and organizational skills, who use a carefully selected mix of instructional strategies and who are aware of the influence of their expectations on students' actual learning, are likely to elicit high levels of on-task behavior from their students. It is a complex juggling act and one that requires impressive instructional and managerial ability, but the results in terms of academic achievement will be well worth the effort.

CHAPTER 6

TIME ON TASK AFFECTS POLICIES AND PEOPLE

In the last century or so, the amount of knowledge available has burgeoned, but the amount of time students spend in school has stayed relatively the same. How can this new knowledge, and the skills that have come with it, be fit into the school's traditional time frame of five and a half hours a day, five days a week, 180 days a year? Obviously it can't—at least not all of it. But squeezing a little more learning into each school day might help.

School systems from New Brunswick, New Jersey, to San Diego, California, are dramatically increasing their students' academic achievement by instituting programs that increase student learning time. Although the programs in these and other districts may vary widely in detail, the basic theme is similar: find out how time is actually used—or wasted—during the school day, and then increase the amount of time the students spend actively learning. The appendix gives a step-by-step plan for implementing a time-on-task approach to learning and some cautions about observations. But before making a decision, school administrators need to clarify the effects on policies and personnel.

■ Policy trade-offs need consideration

Lorin Anderson of the University of South Carolina has identified five major trade-offs involved in developing mastery-based instructional programs. Each of these trade-offs involves movement away from a traditional belief or practice and toward a

new one. Programs to increase learning time are subject to the same trade-offs, which Anderson describes as follows:

- **Mastery vs. Coverage.** Given the dramatic increase in human knowledge, educators face a clear choice between mastery of the most important material or coverage of a lot of material. In states where minimum educational requirements are mandated by law, the choice is sometimes made in terms of what material the teacher is expected to cover and how much time must be allocated to cover that material—not in terms of what students must learn. Schools that choose to educate for mastery rather than coverage, on the other hand, must first be clear on what the essentials of learning are. A key question in making that determination is, "What are the consequences, both academic and real-life, of learning or failing to learn particular content?"
- **Achievement-based vs. Time-based Promotion.** Promotion has sometimes been based on some factor of time, such as the student's age or grade level or the acquisition of a certain number of units or credits. When students realize they are likely to be promoted each year regardless of their achievement during the year, they are less likely to strive for achievement. The result is that many students are moved ahead without having attained the knowledge and skills they need to be successful in tasks at the next higher level. Achievement-based promotion, on the other hand, ensures that students are not promoted until they have demonstrated that they are prepared to handle succeeding units, courses or programs.
- **Criterion-referenced vs. Norm-referenced Assessment.** An instructional program that is based on mastery and achievement requires fairly specific information about the accomplishment of tasks. Such information is difficult to obtain from traditional norm-referenced assessment, which assesses a student's performance in relation to the performance of others. Criterion-referenced assessment, on the other hand, is based on the student's performance on a continuum of specific tasks. The AASA publication, *Evaluating Educational Programs*, looks more closely at this issue.
- **Facilitating Learning vs. Allowing Learning to Occur.** By redefining aptitude as the amount of time a student needs to learn a particular concept or skill, John Carroll's model of school learning places the primary responsibility for learning squarely on the school. Because administrators and teachers

usually control the amount of time allocated to a particular subject or task, they can in effect control the student's opportunity to learn and ultimately, their learning. However, many educators still believe that aptitude is a function of capacity to learn, and consequently much of what passes for instruction is simply a matter of allowing learning to occur. Because it involves a fundamental change of attitudes and beliefs, the decision to facilitate learning rather than to simply allow it is a difficult trade-off to make.

- **Task-oriented vs. Activity-oriented Instruction.** As discussed earlier, the distinction between tasks and activities is a crucial one. Moreover, there is little or no research evidence about the precise kinds of activities that are related to the accomplishment of particular tasks. Teachers commonly decide on a set of activities that they believe will have a desirable outcome and then focus on involving students in these activities. A valid relationship between activity and task—between assignment and desired outcome—must be established if a mastery-based program is to be effective.

■ Change begins with school personnel

The types of trade-offs Lorin Anderson has identified may at first glance seem only tangentially related to the goal of increasing time on task, but in fact, programs to increase instruction time may be only empty exercises unless both the content and the delivery of instruction are also examined. Such examination is likely to turn up various areas where change would be beneficial—including, of course, the areas of learning time. The classroom observations described in the Appendix, in addition to identifying problem areas, may have the added benefit of opening channels of communication among school personnel, generating support for change. (However, be sure to read the cautions about observing.)

Before change can proceed effectively, there must be a high level of trust and understanding among teachers and between teachers and administrators.

- **The Central Administrator's Role.** The superintendent's support is crucial to the success of any new program, particularly one to increase time on task. According to John R. Champlin, "It's important to create an atmosphere where teachers and principals feel free to change and amend what they are doing. We call this renewal. The role of the administrator is to legitimize any changes that occur within the

classroom structure or building. More specifically, the administrator must provide an environment where the teachers and principals know that making mistakes is part of the learning process." When the Johnson City schools implemented its mastery learning program, Champlin recalls, teachers and principals went through a period of insecurity as they developed their skills. They made mistakes, but the mistakes were part of the process of perfecting their skills. As they learned to implement the new techniques, they were able to use what they had learned in inservice training because they had administrative support.

- **The Principal's Role.** The principal's part in creating an environment supportive of change is particularly important because of the isolation or even distrust with which some teachers might view the principal. That distrust may be attributed in part to the changing role of the principal. Originally, the principal teacher in the school, the principal was responsible for setting an example of educational leadership. Now, however, principals often find themselves managers of everything except learning. Occupied with more and more administrative duties, other than instructional leadership, today's principals frequently spend little time in the classroom, and the time they do spend there may be seen by the teachers as an intrusion. (Be sure to read the cautions about observations in the Appendix.)

  Establishing open lines of communication with the staff is a necessary prerequisite to implementing change. The principal must be willing to listen to the teachers' perceptions of the situation in addition to sharing his or her own views. And the principal must be willing to take a leadership position in acting on problems that are identified.

  Discussing problems with the entire staff increases their involvement and sense of ownership in the solution. Teachers who feel they have had a voice in decision making are more highly motivated in their work, and this motivation is likely to carry over to the students as well.

  Principals are also the liaison between the teachers and the central office administration or the community. When teachers request that a particular policy be changed, for example, it is the principal through whom the request is funneled to the central administration or the school board. Similarly, when questions are raised about the effectiveness of a particular program or policy, the principal is usually the first

judge of the matter. And finally, the principal keeps parents informed of current school programs and activities. When a new program, such as one to increase time on task, is put in place, it is generally the principal who explains the program to the parents.

- **The Role of Staff Development Personnel and Curriculum Administrators.** Staff development personnel are important to the success of a time-on-task program because they are frequently charged with conducting the necessary inservice programs to allow change. Curriculum administrators often are charged with revising curriculum materials. These personnel must work closely with the central administration, the principal and the teachers to gain an understanding of the school's general operation and political climate before they can design effective inservice or begin reviewing curriculum.
- **The Teacher's Role.** Because the teacher is the direct link between the student and academic achievement, the role of the teacher is the most critical in any effort to improve achievement. When teachers have been familiarized with the concepts underlying learning time and achievement and when they have been involved in classroom observations that identify factors leading to time off task, they should also be involved in determining strategies and policies that will increase learning time. It is worth repeating, however, that teachers who feel threatened by observation or who feel shut out of the decision-making process will feel little impetus to implement change.
- **The Communications or Public Relations Role.** The key to successful implementation of a time-on-task emphasis in a school system may be convincing teachers, students and the public that increasing learning time will help students. The district's communications or public relations professional can help by maintaining relationships with the media and school personnel. In an era when citizens want their schools to have a sense of direction and to get a handle on their problems, news about increasing time on task could be welcome in the community.

■ Time on task needs a proper perspective

As much as we might like it to be, time on task is not a magic wand that can make all the ills that plague education disappear in a puff of smoke. It is, rather, a valuable tool that, when used

with care, can play an part in building student achievement.

With time on task, as with most tools of the trade, however, some cautions are in order. As we have seen, keeping students strictly on task does not always produce the desired results. In fact, a study conducted by Charles W. Davidson and Michael L. Bell of the University of Southern Mississippi found that, in the researchers' words, "strictly business teachers may actually have short-term positive effects on pupil learning" or may even have a negative influence on students' attitudes toward learning and school. Human relations and communications skills on the part of the teacher are essential ingredients.

Other studies, such as one conducted by Robert Soar of the University of Florida, suggest that time on task has a definite diminishing effect. When time on task is emphasized, Soar postulates, there may come a point at which learning reaches a plateau and then decreases.

But increased time on task has also been shown to correlate with increased student motivation. When students see their skills increasing through on-task behavior, their self-esteem and motivation for learning often grow as well. Viewed as part of a school's overall plan for improvement—and not simply as an end in itself—a time-on-task program can be a valuable contribution to school organization and academic achievement.

APPENDIX

A STEP-BY-STEP APPROACH TO TIME ON TASK

Developing a program to increase time on task in your school or school district will be easier if you follow a series of steps:

■ Step 1: Exploring the topic

Reading books and articles devoted to the concept of learning time is an important first step. Many educators who have some familiarity with the idea of time on task believe, mistakenly, that the amount of time students spend engaged in learning is determined solely by how the teacher manages the classroom and organizes instruction. The truth, as we have seen, is that learning time is influenced by a host of additional factors—student behavior, building schedules and curriculum priorities, to name a few. Reviewing current materials helps teachers and administrators understand the range of factors involved and select appropriate strategies to fit their own needs.

Annegret Harnischfeger of Northwestern University also recommends reviewing case studies of other schools that have successfully increased student achievement by increasing time on task. In addition to providing examples of programs that work, case studies can also point up common problems that arise during the implementation of a time on task program.

One way to start building your time-on-task reading list is to consult the list of selected readings included in this book. Each book or article you read may cite others you will want to refer to. Unfortunately, in many libraries the material listed under the heading of time on task is still scarce. Even the Education Resources Information Clearinghouse (ERIC) system does not include a listing for time on task, but related information can be found under the headings of engagement rate, allocated time, academic learning time, mastery learning or the Beginning Teacher Evaluation Study (BTES).

Once you have done some reading, you may find it valuable

to attend professional seminars and conferences where sessions on learning time are scheduled. In addition, consulting with researchers and practitioners who have worked in the area may provide useful advice.

■ Step 2: Conducting preliminary assessments and training

Preliminary assessments of the use of school time generally include self-assessment by teachers, analysis of the building schedule and classroom observation. While actual observation is the prime assessment tool, the preliminary steps are equally important. According to C.L. Hutchins of the Mid-continent Regional Education Laboratory (McREL), self-assessment is particularly critical: "Until the faculty (i.e., teachers) and administrators examine the relationship of time and other factors to improvement, they won't be motivated to act."

During the preliminary stages, McREL uses two assessment instruments: the Academic Efficiency Indicator (AEI) and the Academic Inventory Survey (AIS). The Academic Efficiency Indicator produces an index of the teachers' efficiency in the use of time. On the AEI, administrators record the total time available in the school day; the time scheduled for noninstructional activities (e.g., lunch, recess, home room, transition time between classes); the school's total enrollment; the average number of students absent each day; the average engagement rate; and the average proportion of nonacademic instructional time per class (e.g., managerial activities, disciplinary actions, or outside interruptions). The Academic Inventory Survey (AIS) is administered to teachers, who give their perception of the use of time. AIS is used as a catalyst to stimulate a teacher's thinking about the use of time in the classroom and the factors that lead to wasted time. Both the AEI and AIS assessment instruments give McREL an insight into current problems that a school or system has identified and wishes to solve.

Training school personnel to understand and apply concepts related to learning time is an important part of solving those problems. A training program conducted by Research for Better Schools, Inc. (RBS) begins by presenting the idea of time on task and its importance in the classroom. During the training, teachers are requested to fill out pre-observation forms that specify the number of students assigned to a particular activity during the observation period. Because RBS works primarily with school systems interested in increasing basic skills devel-

opment, the categories noted on this form are: Reading/Language Arts, Math, Other Subjects, Pull-Out, and Out of Room. Other categories could be added depending on need. Figure 1 on page 66 shows an example of a completed pre-observation form.

During the training, the school personnel also learn the basic terminology they will need to complete observation forms. To familiarize themselves with the observation process, they view video simulations of classroom experiences and conduct trial observations.

■ Step 3: Choosing and using assessment forms

Actual classroom observation can be conducted using any of a variety of assessment instruments. Commonly used instruments include the following:

Seating charts are used by many observers to record off-task behavior. In general, seating charts indicate the position of each student in the classroom, either graphically, as in Figure 2, or schematically, as in Figure 3. (See pages 67 and 68.) In addition to seating arrangement, some seating charts also show the positions of such items as the teacher's desk, the chalkboard or boards and various other structures, such as storage facilities. Using a seating chart, an observer can quickly note exactly which students are off task and indicate the nature of the off-task behavior.

The engagement rate form, one of the observation instruments used by RBS, allows the observer to record the number of students actually involved in off-task activity at the time of the observation. On the engagement rate form shown in Figure 4 (on page 69), categories include management/transition, socializing, discipline, unoccupied/observing and out of room. The form shown allows for six separate observations, which are usually carried out a few minutes apart. To begin the observation, the observer enters the actual time of the observation on the line labeled "time" and the number of students the observer is assigned to watch on the line labeled "assigned." The observer then scans the room to see how many students are involved in any of the off-task behaviors listed. If, for example, two students are talking to each other instead of doing classwork, the observer enters the number *2* on the line labeled "socializing." For each observation the process is repeated. At the end of the observation period, the observer totals the number of students observed to have been engaged in off-task behaviors and subtracts that number from the total number of students observed to

determine the number of students engaged in learning activities. The engagement rate is then determined by dividing the number of students actually engaged by the total number of students assigned. If, for example, the observer is assigned to watch 30 students and only 20 are found to be on task during the observation period, the engagement rate is 20 divided by 30, or 66 percent.

The allocated time log, also used by RBS, is completed by the teacher during the observation period. On this form (see Figure 5 on page 70), the teacher notes the nature of each academic activity, when it begins, when it ends and the total time allotted to it. It is important to remember that this form records only the amount of time allocated for learning—not how the time is actually used. Using the allocated time log and engagement rate form together will give a clearer picture of how much time students actually spend learning.

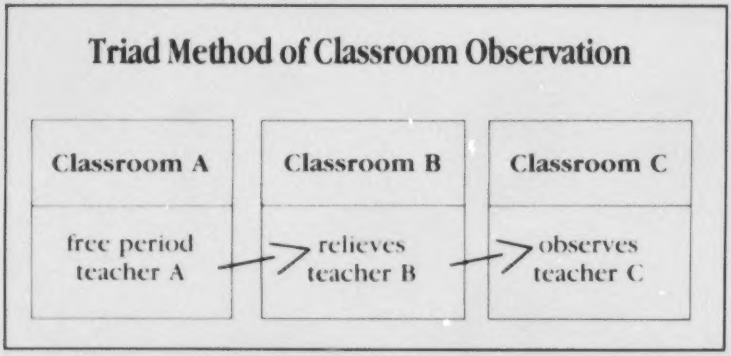
The teacher interactions form (Figure 6 on page 72) is used by the Stallings Teaching and Learning Institute in conjunction with a seating chart to record teachers' interactions with individual students. Using this form, the observer notes the teacher's behavior, the student he or she addresses and the type of interaction. A teacher might interact with a student by: asking a direct question; asking a clarifying question; making a comment; praising or supporting a response; correcting a response; correcting and guiding a response; or reprimanding behavior.

■ Step 4: Forming observation teams

Once the staff has decided which observation instruments best fit their needs, the next step is determining who will do the actual observing. Possibilities include paid professionals; teams of teachers trained in observation techniques; and the principal, either alone or working with a team of teachers.

Teachers as Observers—One approach to using teachers as observers is the *improvement triad* developed by McREL. In the improvement triad, one teacher who has a free period covers a second teacher's class while the second teacher observes a third teacher's class. Three observations are carried out so that each teacher in the triad can be observed by one of the others in the group.

The triad method does not include principals as observers because, in McREL's estimation, teachers may feel threatened if the principal is present or fear that the principal will turn what



is essentially an experimental exercise into an evaluation. Unless the teachers are involved in clinical supervision or are already accustomed to having the principal visit the classroom on a regular basis, McREL recommends that principals not be involved in classroom observation.

When the triad has finished its observations, the data are reported anonymously to the principal, who is not told which classes were observed. Knowing that the observations will not reflect on them personally relieves possible anxiety for many teachers.

While this method of observation can produce important indicators of problems in time use, McREL's Hutchins stresses that the data produced in triad observations are short-term data and are not sufficient to complete a valid evaluation of a particular teacher's use of time.

Teacher teams are also used for observations by Annegret Harnischfeger. "I ask teachers to go into other classrooms and do selected observations, record the information and analyze the data with each other," she says. "This increases their awareness of the problems." Harnischfeger generally uses a team of two teachers for such observations.

Using teachers as observers can have definite advantages. For one thing, teachers tend to be more critical of their professional peers than are principals or other administrators. Provided the information will not be used for evaluation, they may record data more accurately. And in addition, teachers are likely to

develop a sense of ownership in the project by gaining a first-hand knowledge of the problems involved.

The major disadvantage of teacher observation teams is their cost. Teachers must be away from their classrooms during the training period and the actual observations, which usually means that substitutes must be brought in. Teacher absences from the classroom take their toll, too, in the disruption of learning continuity that frequently occurs when a substitute takes over the class.

Principals as Observers—Because of the high cost of using teachers to conduct classroom observations, Research for Better Schools, Inc. (RBS) uses only principals to conduct the observations. When there is a good working relationship between principals and teachers, using the principal as an observer works well; if the school is already plagued by personnel problems, on the other hand, this approach can simply aggravate existing problems.

According to David Helms of RBS, "There is a sovereignty that exists within a classroom structure that both the principal and the teacher are reluctant to upset. Teachers are very suspicious of anyone entering their arena." To compensate for this suspicion, principals often notify the teacher of the observation time in advance. This practice may relieve tension, but it can also produce unrealistic observation data. Teachers who know when they will be observed may assign only highly on-task behaviors for that time period, such as seatwork or reading assignments. As a result, the teacher looks highly competent and the students' engagement rate is consistently high during the observation.

As principals become more experienced in observation, however, they usually become more comfortable with the idea of appearing in the classroom without notice, which allows them to get a more accurate picture of day-to-day activities. Principals who note that during an observation, the engagement rate is consistently high or the teacher makes use of just one teaching strategy, may have reason to suspect that the day's activities have been planned with the observation in mind. If that is the case, the principal may correct the problem by appearing for an observation unexpectedly or informing the teacher that another observation will be conducted on a day when the teacher is using different teaching strategies.

Jane Stallings has found that principals who have established nurturing working relationships with the teaching staff make

good observers. They have a unique interest in their staff's success. Unlike other principals, they take a personal interest in time on task. Like others who have experimented with using principals as observers, Stallings stresses that there must be real trust between principal and teacher so that teachers understand that such observations will be used for staff development and not evaluation.

■ Step 5: Conducting the observation

During a classroom observation designed to assess the use of time, observers look for one or more of the following:

- the amount of **time allocated** to a particular area of study during the day;
- the amount of **time actually spent** by the student in active learning;
- the **teacher behaviors** that maintain or improve students' engagement rates;
- the **classroom disruptions** that interfere with the engagement rate;
- the students' **off-task behavior;** and
- any **outside disruptions** that interfere with the engagement rate.

Focusing on the Students—Observations generally begin by focusing on student behavior. The observer sits in a strategic location, usually the front of the classroom, and uses a seating chart with the students' names or numbers indicating specific students. Other forms may also be used, designed for specific objectives.

In order to know how much time students spend off task in comparison to total instructional time, the observer records the difference between the time allocated for instruction and the actual time spent on learning. This can be done by using the wall clock or a stop watch to note when the allocated time begins and a stop watch to measure time actually engaged. Another way is to record the allocated time and then scan the room every five minutes and record which students are off task during the instructional period.

Once this information is gathered, observers can either end the observation and join the rest of the observation team to begin analyzing the data; or they can continue to observe—either on the same day or on a succeeding day—to record the reasons for off-task behavior and the methods teachers use to bring the students back on task.

Monitoring Teacher Behavior—Recording the teacher's behavior is an important part of the classroom observation. Observers assigned to this task usually look for the following kinds of information:

- What kinds of teaching strategies are used?
- If the teacher uses a mix of strategies, are the transitions between strategies brief and smooth?
- What do the students do during transitions? Do they have work to keep them occupied, or do they simply sit and wait?
- Does the teacher tend to focus instruction on a particular group of students?
- Is seatwork supervised, or is it busywork to keep students occupied while the teacher is doing other things?
- Are assignments well organized and clearly stated?

Observers should remember they are not in the classroom to evaluate the teacher's performance but to assess factors in the use of time.

Analyzing the Building Schedule—Although the major features of the building schedule—such as timing of lunch, recess and announcements—will probably have been analyzed before classroom observations begin, the observer will be able to note the actual effects of various features of the schedule. For example, observers can note how long it takes students to get back to work after recess, how much disruption occurs due to pull-out programs and the like.

■ Step 6: Analyzing the observations

Once all the observations have been completed, the collected data can provide a clear picture of classroom activities: which students were on task and for how long; what teaching strategies appear to increase or decrease time on task; how much time is lost to various disruptions; and the exact nature and cause of those disruptions. This picture adds up to a great deal more than a classroom scenario. Properly analyzed, it gives accurate data about the actual number of minutes students are actively learning each day.

One figure you will undoubtedly want to determine is the students' engagement rate. That is done by dividing the amount of time set aside for instruction (allocated time) by the total amount of time students are actually engaged in on-task behavior. The formula for finding the engagement rate is allocated time divided by student engaged time (time on task). For example, if the teacher allocated 60 minutes for mathematics but

the student was engaged in a related learning activity for only 30 minutes, the engagement rate is 50 percent. But remember that other factors affect whether a student is learning.

More specific measurements can also be used to determine engagement rate. Research for Better Schools, Inc., multiplies the number of students in a class by the number of times they were observed. The resulting number is then divided by the number of times the students were engaged in off-task behavior. For example, in a classroom of 20 students that has been observed 10 times, there may be 40 instances of off-task behavior in all. Applying those figures to the RBS formula yields an engagement rate of 20 percent.

Engagement rate is important, but it does not tell the entire story, cautions David Helms. "The classes' engagement rate may be as high as 90 percent, but if the school system only allocates 30 minutes a day for the particular subject, then the student is only receiving 27 minutes of instruction per day." If the school year is 180 days, that translates into only 81 hours of instruction in that subject per year.

Thus if classroom observations indicate a reasonably consistent high rate of engagement but the school staff is not satisfied with the general level of student achievement, it may be that not enough time has been allocated to certain subjects. Or it may be that the students are spending time on inappropriate tasks, a problem that will not show up in this kind of assessment and will require further study.

More likely, however, classroom observations will pinpoint surprising amounts of time taken up by unexpected interruptions or inefficient classroom management and organization. Once problem areas have been identified, specific strategies can be developed for alleviating them.

■ Warning: Observations can be deceiving

Although classroom observations are the foundation of most programs to increase time on task, they are also the source of some controversy. Even with careful training in observation techniques and the use of objective assessment forms, observers may misinterpret what they see in the classroom or form subjective value judgments about student and teacher behavior.

Stanford University's Elizabeth Cohen warns against these dangers: "Too much focus is given to the concept of busy eyes and busy hands. If students either appear to be manipulating classroom materials or watching the teacher attentively, then they

are said to be on task during an observation. By the time pupils are in the fourth grade, they learn to dissemble. This means that although they may appear attentive, they may actually be off task."

Overt involvement is easy to discern. Children are sitting at their desks actually working on an assignment. They may be working in a group, reciting or reading. Or they may be working directly with the teacher.

Covert involvement is more difficult to note. A student who is staring out the window may either be daydreaming or thinking through the answer to a problem. Similarly, a student who is talking with another pupil may be asking for clarification of the instruction or may simply be gossiping.

The key, according to David Berliner, is to determine what behaviors will keep the student on the right task. In some cases, the most effective strategy is the teacher standing in front of the classroom directly instructing the whole class. In other instances, peer tutoring with a high exchange of verbal communication may work best.

Just as controversy exists over what to observe, another lesser controversy occurs over the issue of whether to study teachers or students. Ken Sirotnik of the Laboratory in School and Community Education at the UCLA Graduate School of Education, stresses that there are at least three favored modes of time-on-task observation: observing what the teacher is doing in the direction of instruction, behavior modification and routine work; asking the teacher's perception of the amount of time a student spends on task; and observing the amount of time a student actually spends engaged in a task. Conversations with consultants indicate that most prefer to use a combination of these modes.

■ Some reasons for observing

Despite its problems, classroom observation gives teachers and administrators an accurate assessment of the causes of decreased time on task. For example, Annegret Harnischfeger has found that some teachers only need 30 minutes per day for management activities—getting groups to the reading corner, getting groups back to their work or getting students to start on their math sheets—while other teachers need more than an hour and a half for the same activities.

Administrators can use observations to see how school schedules decrease time on task from class to class. Harnischfeger

found that one class spent an average of 4 hours and 12 minutes on pupil instructional time after breaks, transitions and managerial activities, while another class in the same school spent only 2 hours and 28 minutes. This means that the students in the first class received 70 percent more instructional time.

This same information can provide a measureable goal for the school administrator. Once administrators have assessed the factors or problems that decrease time on task and the level of achievement during the observation period, they can determine what problems they will need to correct in order to increase the time spent on task and improve student achievement.

If students are scoring at the 50th percentile in national achievement tests and the school is using only 50 percent of the academic day for instructional activities, then it may well be assumed that increasing the instructional time will improve test scores. It is important to remember in making such correlations, however, that students must spend time on the right tasks.

FIGURE 1

Pre-Observation Form

Teacher Tom Smith
Observer Jane Jones
Time Interval 1:22-1:30
No. of Students Present 27

Subject Math
Observation Date 10/9/82
Circle Part of Period beginning middle end

Record number of students assigned to each category during the observation period

Times	Reading/ Language Arts	Math	Other Subjects Specify:	Pull-Out	Out of Room Specify:
1:22-1:30	Any student not assigned to art or science may do reading when math is completed	27 students assigned math at beginning of observation	4 students in back row assigned art when math is completed. One student will do science when math is completed	Toward the end of the observation, 3 students go to 310 remedial reading	2 students to Nurse for eye examinations

Briefly describe assignments for each subject and free-time activities (attach worksheets if possible)

Reading Any student not assigned to art or science may read or complete reading work when math worksheet is done

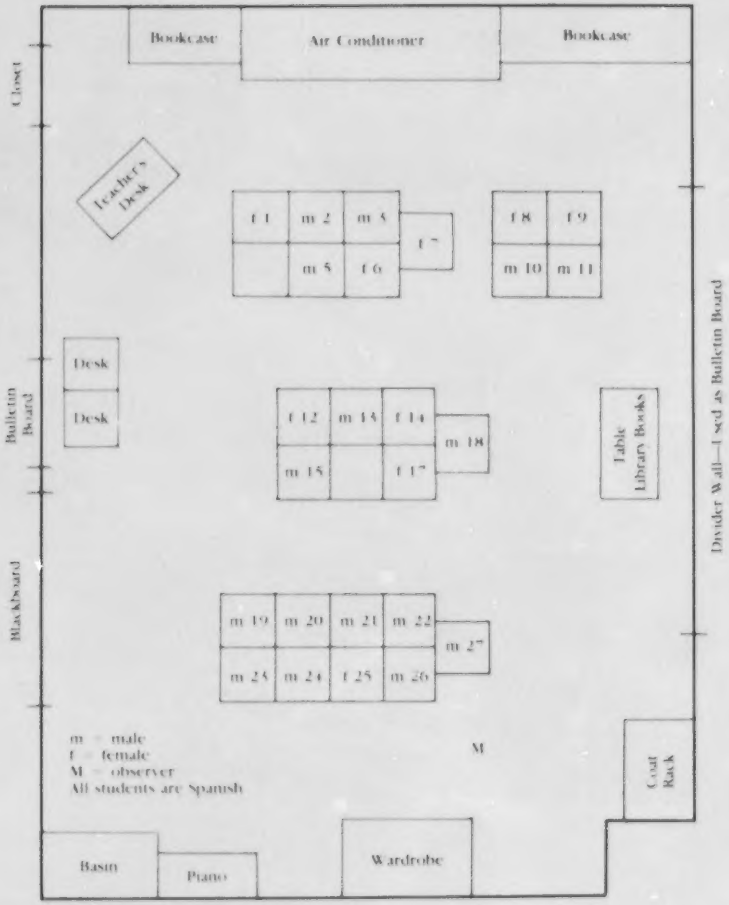
Math Students will be completing a worksheet on addition with regrouping. Students may use number rods to complete the worksheet. When students finish the worksheet, they may work in their math workbooks or write the worksheet problems on the board.

Other The four top math students who are in the back of the room will be cutting out pumpkins for the now empty bulletin board when they have finished the math worksheet. One other student will complete her science assignment when her math worksheet is finished.

Source: Research for Better Schools

FIGURE 2

Seating chart



Source: Annegret Harnischfeger, "Determinants of Pupil Opportunity," in *The Analysis of Educational Productivity*, ed. R. Dreeben and J. A. Thomas (Cambridge, MA: Ballinger, 1980).

FIGURE 3
STUDENTS OFF-TASK SEATING CHART

DATE: _____

ACTIVITY #1: _____ **TIME:** _____

ACTIVITY #2: _____ **TIME:** _____

Mrs. Smith (front of classroom)			
Flora	Mark W	Betty	Joe
Jose U	Susan	Robert	Dona
Ursula S	Daniel	Ellen	Bill U
Sharon S	Jack	Lee	Mary

INSTRUCTIONS:
1. Fill in students' names in seats.
2. Fill in date, activity & time.
3. Complete a coding every 5 minutes.
4. Use one form for two codings (first: black ink, second time: red ink).

CODES:
S = Socializing
U = Uninvolved
W = Waiting for assistance

Source: Stallings Teaching and Learning Institute

FIGURE 4

ENGAGEMENT RATE FORM

Observation TIME Actual Time Observed	1	2	3	4	5	6	TOTAL	ENGAGEMENT RATE
ASSIGNED								ENGAGED ASSIGNED
MANAGEMENT/ TRANSITION								
SOCIALIZING								
DISCIPLINE								
UNOCCUPIED/ OBSERVING								
OUT OF ROOM								
TOTAL UNENGAGED								
ENGAGED								

Source: Research for Better Schools, Inc.
For directions on how to use this form, see page 57.

FIGURE 5

ALLOCATED TIME LOG

State _____
District ____
School ____
Teacher ____
State # _____
District # ____
School # _____
Teacher # ____
Date _____
Grade ____
No. of Students
Present _____

	(A) Activity	(B) Beginning Time	(C) Ending Time	Time in Minutes (B)—(A)
	1			
	2			
	3			
	4			
	5			
	6			
			TOTAL	

DIRECTIONS

1. Fill out the information at the top of the page, including the date, subject (reading/language arts or math), and number of students present.
2. Whenever students are assigned to the subject area, record a description of the activity (e.g., reading groups, spelling, math drill) and the beginning time (A).
3. Record the ending time when assignments change (e.g., the activity is completed). Find the time spent on the activity in minutes (C) by subtracting beginning time from ending time (B—A).
   - If students are working on more than one subject area during an activity (e.g., math or reading seatwork), put "varies" in as the ending time (B) and for time in minutes (C), put an estimate of the time an average student spends completing the activity in the subject area.
   - If part of the class is working in one subject area while the rest of the class works in another subject area, adjust the time in minutes by multiplying by the approximate fraction of the class in the appropriate subject area. For example, if about half the class is working on reading and about half on science during a 60-minute activity, the time in minutes is $\frac{1}{2} \times 60 = 30$ minutes.
4. Add the last column to get the total allocated time for the subject area.

Source: Research for Better Schools, Inc.

FIGURE 6

TEACHER'S INTERACTIONS WITH STUDENTS SEATING CHART

DATE: _____ **SCHOOL:** _____

Mrs. Smith	(front of classroom)

Flora	Mark	Betty	Joe
Jose	Susan ?	Robert	Dona
Ursula	Daniel	Ellen	Bill —
Sharon	Jack	Lee	Mary

INSTRUCTIONS:

1. Fill in student's names in appropriate seats. Fill in the dates.
2. Each time the teacher speaks to an individual student, record the appropriate code in the student's box.

CODES:

?	= Asks a direct question	+	= Praises or supports a response
(?)	= Asks an open-ended question	C	= Corrects a response
!	= Checks for understanding	G	= Corrects and guides a response
✓	= Makes a comment or response	–	= Reprimands behavior

Source: Stallings Teaching and Learning Institute

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